TEST REPORT

Report No:	TMC181203104-H
File reference No:	2018-5-7
Applicant:	Hipcam Ltd.
Product:	Doorbell Camera
Brand Name:	Hipcam
Model No:	HD008, HD009, HD010, HD011, HD012, HD015, HD016, HD017, HD018, HD019, HD020
Test Standards:	EN 62311:2008
Test result:	The testing has been performed on the submitted samples and found in compliance with council EN 62311:2008
Approved By	

Lemon Rao
EMC Manager

Dated: December 17, 2018

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

TMC Testing Services (Shenzhen) Co., Ltd.

1/F., Block A, Xinshidai Gongrong Industrial Park, No. 2, Shihuan Road, Shilong Community, Shiyan Street, Baoan District, Shenzhen, China

Tel:86-755-86642861 Emai:Cert@tmc-lab.com

1. General Information

1.1 Notes

The test results of this report relate exclusively to the test item specified in 1.5. The TMC Lab does not assume Responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the TMC Lab.

1.2 Testing Laboratory

TMC Testing Services (Shenzhen) Co., Ltd.

1st Floor, Block A1, Zone A, Xinshidai Gongrong Industrial Park, No. 2, Shihuan Road, Shiyan Street, Baoan District, Shenzhen, China

1.3 Details of Applicant

Name: Hipcam Ltd.

Address: 11th.Gush Tzi Tzion St. Giva'at Shmuel Israel

1.4 Test Item

Manufacturer: ShenZhen SiGo Electronics Company Limited

Address: No. 143 Huasheng Road, Dalong street, Longhua District, Shenzhen

Brand Name: Hipcam

Model No.: HD008

Additional Model No.: HD009, HD010, HD011, HD012, HD015, HD016, HD017, HD018, HD019, HD020

Additional Brand Name: N/A

Description: Doorbell Camera

1.5 Additional Information

Frequency: 2412 ~ 2472MHz-WIFI

Number of Channels: 11 Channels

Hardware Version:V1.0

Software Version: V1.0

Antenna Designation : Onboard PCB antenna with gain 0dBi

Type of Modulation: DSSS OFDM for WIFI

Extreme Temp. Tolerance: -20℃ to 55℃

1.6SUMMARY

EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

o - supplied by the manufacturer

● - supplied by the lab

NOTE

1. The EUT is a wireless device work at 2400~2483.5MHz,The functions of the EUT listed as below:

EUT Model	Test Standards	Reference Report
HD008	EN 62311:2008	TMC181203104-R

2 . Test environment

2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:
Temperature: 15-35 ° C
Humidity: 30-60 %
Atmospheric pressure: 950-1050mbar

2.2. Statement of the measurement uncertainty

Equipment

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements. Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.
Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.
All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

3.Measurement Uncertainty

Test Item	:	Uncertainty
Radio Frequency	:	0.9×10^{-4}
Total RF Power, Conducted	:	1.0 dB
RF Power Density, Conducted	:	1.8 dB
Spurious Emissions, Conducted	:	1.8 dB
All Emissions, Radiated	:	3.1 dB
Temperature		0.5°C
Humidity		1 %
DC And Low Frequency Voltages		1 %

4.HUMAN EXPOSURE TO THE ELECTROMAGNETIC FIELDS

Basic Restrictions Reference levels

Radiated Emission

Council Recommendation 2014/53/EU Annex II

Basic restrictions for electric, magnetic and electromagnetic fields (0Hz to 300GHz)

Limit

Frequency range	Magnetic flux density (mT)	Current density (Ma/m2) (rms)	Whole body average SAR (W/kg)	Localised SAR (head and trunk) (W/kg)	Localised SAR (limbs) (W/kg)	Power density (W/m2)
0Hz	40	-	-	-	-	-
>0-1Hz	-	8	-	-	-	-
1-4Hz	-	8/f	-	-	-	-
4-1000Hz	-	2	-	-	-	-
1000Hz-100kHz	-	f/500	-	-	-	-
100kHz-10MHz	-	f/500	0.08	2	4	-
10MHz-10GHz	-	-	0.08	2	4	-
10-300GHz	-	-	-	-	-	10

Note:

1. f is the frequency in Hz.

2. The basic restriction on the current density is intended to protect against acute exposure effects on central nervous system tissues in the head and trunk of the body and includes a safety factor. The basic restrictions for ELF fields are based on established adverse effects on the central nervous system. Such acute effects are essentially instantaneous and there is no scientific justification to modify the basic restrictions for exposure of short duration. However, since the basic restriction refers to adverse effects on the central nervous system, this basic restriction may permit higher current densities in body tissues other than the central nervous system under the same exposure conditions.

3. Because of electrical inhomogeneity of the body, current densities should be averaged over a cross section of 1cm2 perpendicular to the current direction.

4. For frequencies up to 100 kHz, peak current density values can be obtained by multiplying the rms value by √2(=1.414). For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated as=1/(2tp)

5. For frequencies up to 100kHz and for pulsed magnetic fields, the maximum current density associated with the pulses can be calculated from the rise/fall times and the maximum rate of change of magnetic flux density. The induced current density can then be compared with the appropriate basic restriction.

6. All SAR values are to be averaged over any six-minute period.

7. Localised SAR averaging mass is any 10g of contiguous tissue; the maximum SAR so obtained should be the value used for the estimation of exposure. These 10g of tissue are intended to be a mass of contiguous tissue with nearly homogeneous electrical properties. In specifying a contiguous mass of tissue, it is recognised that this concept can be used in computational dosimetry but may present difficulties for direct physical measurements. A simple geometry such as cubic tissue mass can be used provided that the calculated dosimetric quantities have conservation values relative to the exposure guidelines.

8. For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated as=1/(2tp). Additionally, for pulsed exposures, in the frequency range 0,3 to 10GHz and for localised exposure of the head, in order to limit and avoid auditory effects caused by thermoelastic expansion, an additional basic restriction is recommended. This is that SA should not exceed 2mJ kg-1 averaged over 10g of tissue.

Reference Levels

Council Recommendation 2014/53/EU Annex III

Reference levels for electric, magnetic and electromagnetic fields (0Hz to 300GHz)t

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density Seq (W/m2)
0-1Hz		$3,2\times10^{4}$	4×10^{4}	-
1-8Hz	1000	$3,2\times10^{4}/f^{2}$	$4\times10^{4}/f^{2}$	-
8-25Hz	1000	4000/f	5000/f	-
0.025Hz-0,8kHz	250/f	4/f	5/f6,25	-
0,8-3kHz	250/f	5	6,25	-
3-150kHz	87	5	6,25	-
0,15-1MHz	87	0.73/f	0,92/f	-
1-10MHz	$87/f^{1/2}$	0.73/f	0,92/f	-
10-400MHz	28	0.073	0,092	2
400-2000MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046\ f^{1/2}$	f/200
2-300GHz	61	0,16	0,20	10

Note:

1. As indicated in the frequency range column.
2. For frequencies between 100kHz and 10GHz, Seq, E2, H2 and B2 are to be averaged over any six-minute period.
3. For frequencies exceeding 10GHz, Seq, E2, H2 and B2 are to be averaged over any 68/.1.05-minute period (.in GHz).
4. No E-field value is provided for frequencies <1Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 20kV/m. Spark discharges causing stress or annoyance should be avoided.

6.2 Test Results

***Note: All test modes were tested, but we only recorded the worst case in this report.

According to the radio test report, WIFI owns the maximum output power.

EUT parameter (data from the separate report) WIFI mode.	
Max average output power in Watt (TP)=EIRP-Antenna gain	1. Low Channel: 13.73dBm (0.023W) 2. Middle Channel: 11.84dBm (0.015W) 3. High Channel: 10.83dBm (0.012W)
Antenna gain (G)	2.0dBi
Minimum distance in meter (D) (from transmitting structure to the human body)	0.2m
Exposure evaluation	
Given $E = \frac{\sqrt{30 \times G \times TP}}{D}$ yield E1= 5.760 V/m yield E2= 5.962 V/m yield E3= 5.760 V/m	*Where* *G: numerical gain of transmitting antenna;* *TP: Transmitted power in watt;* *D: distance from the transmitting antenna in meter.*
Conclusion: *→E1=5.760 V/m, E2=5.962 V/m, E3=5.760 V/m, is significant lower than the 61V/m as required in Annex III table 2 of EC Council Recommendation (2014/53/EU). This proves that the unit complies with the EN 62311 for RF exposure requirement.*	

Note:

1. Only record worst case data for Low, Mid, High Channel

2. All other emissions are too low to read.

END OF REPORT